# Bruhat Bangalore Mahanagara Palike

**NAME OF WORK: PROVIDING AND FIXING LED LIGHTS AT YELAHANKA DIVISION.**

## INSPECTION REPORT

## Project Management Consultant

AARTN ASSOCIATES
The Modern Construction Solution

## 1. SALIENT FEATURES OF THE PROJECT:



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The Modern Construction Solution

a) Name of Client : Bruhat Bangalore Mahanagara Palike

b) Name of Project : Providing and Fixing LED Lights at Yelahanka Division.

c) Job code : 004-20-000026

d) Name of Agency : Executive Engineer, B.B.M.P, Project Division, Electrical Yelahanka Zone, Bangalore

e) Name of Consultant : M/s AARTN ASSOCIATES

f) Tender Price : 199.00 Lakhs

## 2. Quality Control system

The Works are being executed as per the Guidelines given in the agreement, as per the Relevant Indian Standards and under the Skilled Supervision.All the Stanardard Quality Control Tests of Construction materials, which have been used, have been carried out and the reports are maintained.

All the available Test Reports are enclosed here with in Annexure I.

## 3. Progress Status:

Progress Photoogaphs are enclosed in Annexure II

AARTN ASSOCIATES DATE NO BANGALORE

To,
The Executive Engineer
Project Electrical (ELE)
Yelahanka Zone
Bruhat Bangalore Mahanagar Palike

Bangalore-92.

# "PMC & INSPECTION REPORT"

Dear Sir,

Subject: Regarding Inspection report for the below mentioned work

AARTN ASSOCIATES BANGALORE DATE NO

Providing and Fixing LED Lights at Yelahanka Division.

| SL.NO | Descripition of work | Unit | Qty |
|---|---|---|---|
| 1 | Earth work excavation by manual means in ordinary soil involving an average horizontal throw upto 2 meters and an average lift upto 0.5m, excavated surface levelled and sides neately dressed, the disposed earth to be levelled neatly after breaking of clods complete as per specification. MORTH / Chapter 3 | Cum | 1224.97 |
| 2 | KSRRB M2100-10: Providing and laying in position plain cement concrete of mix 1:3:6 with OPC cement @ 220kgs, with 40mm and down size graded granite metal coarse aggregates @ 0.89 cum and fine aggregates @ 0.46 cum, in foundation mechanically mixed, placed in foundation and compacted by vibration including curing for 14 days including cost of all materials, labour, HOM of machinery, curing, formworks, scaffolding and centering complete as per specifications | Cum | 107.19 |
| 3 | Construction of Median and island with Soil taken from Borrow Areas. KSRRB M400-19. Construction of Median and island with Soil taken from Borrow Areas. Construction of Median and island above road level with approved material deposited from borrowpits, spread, sloped and compacted as per Clause 400.7 complete as per specifications. MORTH Specification No. 407 | Cum | 986.10 |
| 4 | Providing and fixing pre cast solid cement concrete kerb stones made out of CC 1:2:4 with top and bottom width 114 and 165 mm respectively, 400mm high and 450mm in length finished with CM 1:3 plastering and finishing cutting including formwork, curing, including cost of materials, labour charges of machinery, loading and unloading, lead and lift, transportation ete.,complete | Nos | 2207.60 |
| 5 | KSRRB 800-1. Painting two coats after filling the surface with synthetic enamel paint in approved shades on new plastered concrete surfaces, with materials, labour complete as per specifications. MORTH Chapter 8 | Sqm | 1017.42 |
| 6 | Providing and laying in position plain/reainforced cement concrete M20 for sub structure/ Superstructure works, with cement @ 320 kgs, 20 mm & down size graded granite metal coarse aggregate @ 0.69 cum and fine aggregates @ 0.46 cum machine mixed with superplasticisers @ 3ltrs confirming to IS 9103-2008, concrete laid in layers, well compacted and providing weep holes wherever necessary with necessary scaffoldingf, formwork etc., including cost of labour, | Cum | 125.57 |

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| | HOM curing etc., complete | | |
| 7 | KSRRB M2200-6. Providing TMT steel reinforcement Fe500 for R.C.C work including straightening, cutting, bending, hooking, palcing in position, lapping and / or welding wherever required, tying with binding wire and anchoring to the adjoining memebrs wherever necessary complete as per design (laps, hooks and wastage shall not be measured and paid) cost of materials, labour, HOM of machinery complete as per specifications. MORTH specification No 1600 & 2200 | Cum | 4394.80 |
| 8 | Fabricating, Supplying and errection of decorative bent type Conical Street light pole with hot dip Galvanized with BSEN 10025 grade S 355 JO Steel plate for shaft, IS 2062 for base plate with door opening arrangements, including suitable boards, Bakelite sheet for MCBs as per IS Specifications.suitable to withstand the wind speed. The total height of the pole 9 mtrs. The pole should have 2 nos of pole esthetically bent either side. The dimensions of the pole bottom 178 mm,at 9 mtrs height 70 mm 3mm thick and one number of 3 mtr height perforated pole having colour changing LED Fixture, inside as suitable to the picture. The base plate size of 350mm x 350mm x 18 mm and the pole shall be galvanized with not less than 65 micron etc and finally finished with paint as required with two different colour. (With out foundation). As per the enclosed pictures and as per IS standards. As per attached Drawing | Nos | 93.00 |
| 9 | Supply of LED Streetlight luminaire with pressure die cast aluminium housing body for optimal thermal dissipation.Lamp compartment comprising of anti glare clear diffuser with Injection moulded polycarbonate material, delivering superior light output. Rated life Burning Hrs 50000 hr @ Lumen Maintenance of 70%, maximum light intensity should be between 60 degrees to 70 degrees. CCT > 5500K, IP 66 optical and electrical compartment & impact resistance of complete luminaire > IK08. Power Factor >0.9 with mains, Surge Protection- Min 5KV along with Over voltage/Overload, short circuit/ miss-wiring protection. Compatible for pole mouting with outer dia of 40mm to 50mm. Universal Voltage driver to operate wide voltage range from 100V to 270V 50/60Hz application. Compliance to IS 10322/IEC 60598, LM 79 & LM 80 Adherence with RoHS. UL approved MCPCB. Top access street light with single screw to ensure ease of maintenance at the sight site location with minimized minimal tools. LED Light fixture with .....W System Power consumption. LED efficiency>130lm/w, nominal CRI >75.Luminaire manufacturer should have in-house facility accredited by NABL/CPRI & any Government certified agency & Design & Development facility certified by ISO 9001:2008 . Housing with supplier word mark /name shall be Engraved / Embossing on the die cast housing/ Body LED Floodlight 150W part. Warranty of 2 Years against any manufacturing defect working under standard electrical conditions as mentioned above should be given by LED manufacturer & Cree/Nichia/Lumileds/Osram make LED Source. | Nos | 208.00 |
| 10 | Supplying of 1.1 KV LT UG cable XLPE or Heat resistant PVC insulated, PVC extruded Inner sheath armoured UG LT cable as per IS-1554 (Part-1) or IS-7098 Part-1, Armouring strip thickness in average +5% and resistivity 14 Ohms/Kms (Max) as per IS-3975 3.5 core 25 sqmm | Mtrs | 3296.00 |
| 11 | Supplying of 1.1 KV LT UG cable XLPE or Heat resistant PVC insulated, PVC extruded Inner sheath armoured UG LT cable as per | Mtrs | 388.00 |





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| | IS-1554 (Part-1) or IS-7098 Part-1, Armouring strip thickness in average +5% and resistivity 14 Ohms/Kms (Max) as per IS-3975 3.5 core 35 sqmm | | |
| 12 | Labour charges for laying of 1.1 KV class UG cable in existing trench GI pipe / stoneware pipe / on wall / on pole as required In existing trench/duct. 25 sqmm to 75 sqmm | Mtrs | 1224.97 |
| 13 | Digging of trench of 0.6m deep x 0.50 mtr wide refilling the trench to the required ground level and consolidating etc.,complete.(As per Civil SR KSRB I-2, P-7)In soil (ordinary) | Mtrs | 2100.00 |
| 14 | Digging of trench of 0.6m deep x 0.50 mtr wide refilling the trench to the required ground level and consolidating etc.,complete.(As per Civil SR KSRB I-2, P-7)Asphalt cutting | Mtrs | 0.00 |
| 15 | Wiring for lighting/power circuit using one of FRLS PVC insulated 1100V grade, multistrand copper wire with low conductor resistance single core in open or concealed system of wiring with specified IS-694:confirming to latest amendments 1.5sqmm | Mtrs | 6486.00 |
| 16 | Supplying and fixing of class A (medium duty) GI pipe of wall thickness not less than .25mm on pole/wall/drain crossing with necessary clamping arrangements for UG cable of 1.1 KV.40mm | Mtrs | 30.00 |
| 17 | Supplying and fixing L.T. cast Iron pot heads suitable for 1.1 KV class UG cable filled with necessary bitumen/insulating compound complete with terminals, clamps, bolts, nuts and washers etc.35Sqmm | Nos | 6.00 |
| 18 | Supplying tinned copper lugs and crimping and wiring to terminal point for wire of the following sizes.25 sqmm Long Barrel | Nos | 736.00 |
| 19 | Supplying fixing and wiring earth electrode for grounding of lifts, transformers, DG sets etc. using 40mm dia 2.9mm thick 2.5 mtr long GI pipe with GI funnel with mesh and suitable size reducer fixed on the top of the earth electrode.The funnel should be enclosed in a CC chamber of 400x400x400mm with a cast iron cover. The earth electrode shall have staggered holes of 12mm dia and the electrode should be covered 150mm all-round with alternate layers of salt and charcoal from the bottom of the CC chamber. The connection from the electrode is to be established through GI strip using GI bolts and nuts. | Nos | 12.00 |
| 20 | Supplying and running of GI/Copper strips for grounding connections, using necessary fixing materials as required.600x600x3mm Copper plate | Nos | 12.00 |
| 21 | Supplying and fixing angle iron frame work fabricated out of M.S. angle iron.. and M.S. flat ... with bolts, washers etc.,and painted with 2 coats of red oxide and then two coats of approved paint.40x40x6mm | Mtrs | 37.20 |
| 22 | Fabricating supplying and mounting MS box made out SWG suitable for floor / wall mounting, fully weather proof with provision for better heat dissipation, provided with hinged front cover, equipped with tamper proof locking arrangements, with suitable size clamps with necessary cable entry pipe with gland and box should be finished with 7tanks treatment with powder coated paint and finally finished with approved colour etc., complete16SWG | Sqmm | 521316.00 |
| 23 | Supplying and fixing Moulded Case Circuit Breaker (MCCB)over the existing wood/panel board using necessary screws,bolts, nuts, necessary phase separators, handle and wiring complete. Protection of Overload and Short circuit with thermal Magnetic/Micro processor | Nos | 6.00 |





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| | release and Earth Fault as per IS-13947. ( Icu = Ics)100Amps 25kA. | | |
| 24 | Fixing halogen/metal halide / SVL / IL / LED floodlight fitting over existing pole / wall ceiling including clamps, bolts, nuts and wiring using suitable capacity wires. | Nos | 208.00 |
| 25 | Supplying and running of GI/Copper strips for grounding connections, using necessary fixing materials as required.25x3mm Copper strip | Mtrs | 245.00 |
| 26 | Supplying & fixing of retrofit type - LED bulb.....W with OPAL acrylic diffuser comprising of LED source with CCT 6500 degree K, CRI> 70%. efficacy >80 lumen per watt,life> 25000 burning hours and Compliance to IS 10322/IEC 60598, LM 79 & LM 80. The LED are driven by HF electronic driver integrated in the system, with PF > 0.95, power loss should < 5% of lamp wattage., short circuit & open circuit protection to be integrated in the circuit, THD less than 20%,Life as per LM 79. The operating input voltage should be between 130 to 275 volts. BIS Approved and Tested by ABL/CPRI accredited laboratory with 2 years Warranty against any manufacturing defect working under standard electrical condition 18W, 6500K | Nos | 93.00 |
| 27 | Supplying & fixing of Porcelain fuse channel with cut out on existing wooden/panel using necessary nuts, bolts and washers.63Amps | Nos | 24.00 |
| 28 | Remotely control and and monitorable smart street light system by using web or mobile application .smart control system has hardware ruggedness over field issues like line cross, line short, lighting and any other irregularities in voltage. It has some features like 1.Remote lighting management.2.Precise lighting turnoff.3.Load ballancing.4.Load power regulation.5.Status tracking. It works on the basis of some of these features 1) Main Control Unit ( Mother board ) : Handles controlling , data handling and other communication process. 2) Communication unit: GSM/GPRS quad bandwith RS232 interface wireless communication unit 3) Gate Driver Unit: Firing angle controllable board for driving the thyristor 4) Switching Thyristor: SCR 110 AMPS dual thyristor modules for switching 5) Embedded Firmware: Firmware to control , handle , process the data and communicate it wirelessly.6) Metal Enclosure : IP66 weather prof metal enclosure.7) Transformers: Customized step down transformers for various purposes.8) Wiring and other device assembly components. | Nos | 6.00 |
| 29 | Laying of UG Cables by trenchless technology by adopting horizontal boring & Drawing of cable including preparation at site With HDPE Pipe i) Normal soil 5/6" bore size | Mtrs | 356.00 |
| E1 | KSRRB M200-12.1. Dismantling of existing structures like culverts, bridges, retaining walls and other structure comprising of masonry, cement concrete, wood work, steel work, including T&P and scaffolding wherever necessary, sorting the dismantled material, disposal of unserviceable material and stacking the serviceable material with all lifts complete as per specifications. | Cum | 136.40 |
| E2 | Removing and resetting of Kerb Stones. | Mtrs | 829.40 |
| E3 | Cutting of road surface for pipeline trenches and disposing of the | Cum | 114.02 |





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| | excavated stuff as directed including barricading, danger lighting etc., in the Asphalt surface road including cost of materials, labour, HOM complete as per specifications. | | |
| E4 | KSRB 4-1.5 : Providing and laying in position plain cement concrete of Mix M20 with OPC @ 300kgs, with 20mm and down size graded granite metal coarse aggregates @0.69cum and fine aggregtes @ 0.43cum, machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted, in foundation, plinth and cills, including cost of all materials, labour, HOM curing complete as per specifications. | Cum | 5704.16 |

With respect to the above subject and name of the work, we have inspected and verified the measurement and quantity of the materials of the work was found to be completed satisfactorily for the 1St and final bill

Thanking you;

For AARTN ASSOCIATES

AARTN ASSOCIATES BANGALORE

For M/s SURAKSHA ELECTRICALS

Proprietor